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| 10/698,909 | 10/31/2003 | Lifeng Wang | M61.12-0534 | 2969 |

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| EXAMINER | |
|---|---|
| BROOME, SAID A | |
| **ART UNIT** | **PAPER NUMBER** |
| 2628 | |

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 10/698,909 | Applicant(s) WANG ET AL. |
|---|---|---|
| | Examiner Said Broome | Art Unit 2628 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *31 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Drawings*

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: the reference to distance 402, as described in the Specification on page 12 lines 6-7 "The view-displacement map or representation 400 records a distance 402 of each point", is not shown in Figure 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 112*

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim, which depends from claim 1, recites "accessing information of height distribution of the structure with zero curvature". However, the independent claim 1 does not recite a structure wit zero curvature, and the dependent claim 13 is therefore rejected under 35 U.S.C. 112, second paragraph, for containing this indefinite language.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-26 are rejected under 35 U.S.C. 102(a) as being anticipated by Wang et al., herein Wang, ("View-Dependent Displacement Mapping").

Regarding claim 1, Wang describes a computer implemented method, as described on page 337 section 4 first paragraph lines 1-4 ("Our system is implemented on a 1.4 GHz 768MB Pentium IV PC with an ATI Radeon 9700 Pro 128MB graphics card. The hardware-accelerated VDM rendering is implemented as a single rendering pass using Pixel Shader 2.0 with OpenGL."), for generating a representation of structure, as described on page 335 section 3 lines 1-2 ("Our mesostructure rendering technique first takes as input a textured height field sample and converts it to the VDM representation."), for use in rendering a synthesized image, which is an image that renders several characteristics, as described on page 334 in the abstract lines 5-8 ("Unlike traditional displacement mapping, VDM allows for efficient rendering of self-shadows, occlusions and silhouettes without increasing the complexity of the underlying surface mesh."). Wang also describes establishing a selected viewing direction for the structure on page 335 section 3.1 first paragraph lines 1-3 ("A view-dependent displacement map records the distance of each mesostructure point from the reference surface along the viewing direction, as illustrated in Fig. 2."). Wang also describes determining distances from a reference surface to the structure for a plurality of points on the structure, the distances being a function of the selected viewing

direction on page 335 section 3.1 first paragraph lines 6-9 ("For different viewing directions, *P* clearly would project onto different points on the mesostructure surface, so the displacement value *d* is dependent on $x, y, \theta, \varphi$.") and section 3.1 third paragraph lines 1-7 ("...view-dependent displacement information can be organized into a five-dimensional VDM function $d_{VDM}(x, y, \theta, \varphi, c)$..."), and is also illustrated in Figure 2(a) as *d*. Wang also describes storing the distances as a representation, or VDM data, on page 335 section 3.1 first paragraph lines 1-3 ("A view-dependent displacement map records the distance of each mesostructure point from the reference surface along the viewing direction, as illustrated in Fig. 2.").

Regarding claim 2, Wang describes that the steps of establishing a selected viewing direction and determining distances from the reference surface to the structure are performed each for a plurality of selected viewing directions on page 335 section 3.1 first paragraph lines 3-9 ("For a given viewing direction $\mathbf{V} = (\theta, \varphi)$ expressed in spherical coordinates, each reference surface point *P* with texture coordinate $(x, y)$ projects to a mesostructure surface point *P'* that has texture coordinate $(x', y')$. For different viewing directions, *P* clearly would project onto different points on the mesostructure surface, so the displacement value *d* is dependent on $x, y, \theta, \varphi$."), where it is described that the distances are determined for each viewing direction, as illustrated in Figure 3.

Regarding claim 3, Wang describes determining distances includes determining distances with respect to a reference surface having a curvature on page 335 section 3.1 first paragraph lines 1-9 ("A view-dependent displacement map records the distance of each mesostructure point from the reference surface along the viewing direction...For different viewing directions, *P* clearly would project onto different points on the mesostructure surface, so the displacement

value $d$ is dependent on $x, y, \theta, \varphi$.") and on page 335 section 3.1 third paragraph lines 1-7 ("With the consideration of curvature, view-dependent displacement information can be organized into a five-dimensional VDM function $d_{VDM}(x, y, \theta, \varphi, c)$…"), where it is described that a distance is determined for curved surface using the function $d_{VDM}(x, y, \theta, \varphi, c)$.

Regarding claim 4, Wang describes calculating distances for a plurality of selected viewing directions uniformly distributed over a selected range and with respect to a reference surface of zero curvature on page 338 in the Appendix section first paragraph lines 1-7 ("…let us consider a given point $(x_0, y_0)$ and azimuth angle $\varphi 0$ of the viewing direction. Suppose we have $n$ sampled viewing elevation angles $(\theta_0, \theta_1, ..., \theta_{n-1})$ uniformly distributed over $[0, \pi/2]$ and intersecting the microgeometry at points $P_0, P_1, ..., P_{n-1}$, as shown in Fig. 3(a). The displacements of these points are used to compute the zero curvature values of the VDM, and can also be used for calculations of other curvatures."), where it is described that displacements are used to compute values of a surface of zero curvature and are therefore determined for each direction $(V_0, V_1, ..., V_{n-1})$ because the directions correspond to each point $(P_0, P_1, ..., P_{n-1})$, as illustrated in Figure 3.

Regarding claim 5, Wang describes wherein determining distances for a reference surface of selected curvature comprises interpolating distances obtained for the reference surface of zero curvature on page 338 in the Appendix section first paragraph lines 5-7 ("The displacements of these points are used to compute the zero curvature values of the VDM…") and in the second paragraph lines 1-5 ("Bending the zero-curvature microgeometry surface to have curvature $C = C_0$ causes the zero-curvature intersection points to correspond to new viewing angles…To obtain

the VDM values, we resample these non-uniform samples by linear interpolation."), where it is described that he VDM displacement values are interpolated for the surface of zero curvature.

Regarding claim 6, Wang describes determining if a finite distance exists along the selected viewing direction, and wherein storing the representation includes storing the finite distances on page 335 section 3.1 third paragraph lines 7-9 ("If an intersection with the mesostructure exists for $(x, y)$ in direction $(\theta, \varphi)$...then the VDM function takes the value of the view-dependent displacement."), and if a finite distance to the structure does not exist for a portion of the reference surface, storing an indication in the representation that such a finite, distance does not exist for the portion from the reference surface to the structure along the selected viewing direction, on page 335 section 3.1 third paragraph lines 7-12 ("If an intersection with the mesostructure exists for $(x, y)$ in direction $(\theta, \varphi)$...then the VDM function takes the value of the view-dependent displacement. If the intersection does not exist, then $d_{VDM}$ is set to -1.")

Regarding claim 7, Wang illustrates that the determined distances include determining distances as being substantially parallel to the viewing direction in Figure 2(a) as element *d*.

Regarding claim 8, Wang describes determining distances includes determining distances as being a function of an angle of the viewing direction with respect to the preference surface on page 335 section 3.1 first paragraph lines 1-9 ("For a given viewing direction $\mathbf{V} = (\theta, \varphi)$ expressed in spherical coordinates, each reference surface point *P* with texture coordinate $(x, y)$ projects to a mesostructure surface point *P'*...For different viewing directions, *P* clearly would project onto different points on the mesostructure surface, so the displacement value *d* is dependent on $x, y, \theta, \varphi$."), where it is described that the determined distance, *d*, is a function of

the angles, $\theta$ and $\varphi$ , which are angles of the view direction as described on page 335 section 3.1 third paragraph lines 4-5 ("...$\theta$, $\varphi$ are the spherical angles of the viewing direction...").

Regarding claim 9, Wang describes determining distances includes determining distances with respect to a reference surface having a curvature on page 335 section 3.1 third paragraph lines 1-9 ("With the consideration of curvature, view-dependent displacement information can be organized into a five-dimensional VDM function $d_{VDM}(x, y, \theta, \varphi, c)$... direction $(\theta, \varphi)$ with curvature $c$, then the VDM function takes the value of the view-dependent displacement.").

Regarding claim 10, Wang describes storing distances as a function of coordinates indicative of a point on the reference surface on page 335 section 3.1 third paragraph lines 1-7 ("...view-dependent displacement information can be organized into a five-dimensional VDM function $d_{VDM}(x, y, \theta, \varphi, c)$, where $x, y$ are the texture coordinates on the reference surface...").

Regarding claim 11, Wang describes storing distances as a function of a coordinate of the viewing direction on page 335 section 3.1 first paragraph lines 1-6 ("A view-dependent displacement map records the distance of each mesostructure point from the reference surface along the viewing direction... For a given viewing direction $\mathbf{V} = (\theta, \varphi)$ expressed in spherical coordinates...").

Regarding claim 12, Wang describes storing distances as a function of two angular quantities of the viewing direction on page 335 section 3.1 third paragraph lines 1-7 ("...view-dependent displacement information can be organized into a five-dimensional VDM function $dVDM(x, y, \theta, \varphi, c)$, where $x, y$ are the texture coordinates on the reference surface, $\theta$, $\varphi$ are the spherical angles of the viewing direction...").

Regarding claim 13, Wang describes accessing information of height distribution of the structure with zero curvature on page 335 section 3 first paragraph lines 1-2 ("Our mesostructure rendering technique first takes as input a textured height field sample and converts it to the VDM representation."), where it is described that the height information is accessed for the structure, contains zero curvature as described on page 335 section 3.1 fourth paragraph lines 1-2 ("The VDM function is built by first forming a fine mesh for a mesostructure with zero curvature…") and a illustrated in Figure 3(a).

Regarding claim 14, Wang describes decomposing the representation as two lower dimensional representations on page 336 section 3.3 first paragraph lines 9-11 - second paragraph lines 1-4 ("The corresponding 64 MB of VDM data consumes most of the graphics hardware memory and cannot efficiently be loaded. To deal with these restrictions, we decompose and compress the data by singular-value decomposition (SVD). SVD has the benefit that it can efficiently decompose a high-dimensional map into two lower-dimensional maps."), where it is described that the VDM data or representation is decomposed to two lower dimensional representations.

Regarding claim 15, Wang describes using a singular value decomposition algorithm on page 336 section 3.3 second paragraph lines 1-2 ("To deal with these restrictions, we decompose and compress the data by singular-value decomposition (SVD).").

Regarding claim 16, Wang describes determining if a finite distance exists along the selected viewing direction, and wherein storing, the representation includes storing the finite distances on page 336 section 3.2 fifth paragraph lines 1-4 ("The VDM function includes an explicit representation of point visibility along the mesostructure silhouette. When $d_{VDM} = -1$,

then the corresponding line of sight intersects no detailed geometry."), and if a finite distance to the structure from the reference surface does not exist for a portion of the reference surface along the selected view direction, storing the corresponding distance of a maximum viewing direction having a finite distance, as described on page 337 section 3.3 left column second paragraph lines 1-2 ("In VDM, when a ray along a view direction has no intersection with the mesostructure, it is labelled with the special value $-1$.") and third paragraph lines 6-9 ("After this computation, the -1 value of the corresponding polar viewing angle in the original VDM is then replaced with this maximum polar viewing angle.").

Regarding claim 17, Wang describes creating a map to record a maximum viewing direction on page 337 section 3.3 left column third paragraph lines 1-3 ("...we employ an auxiliary 4D Maximal View polar angle Map (MVM)."), having a finite distance for each point as described on page 337 section 3.3 left column third paragraph line 4 ("$d_{VDM}(x, y, \theta, \varphi, c)$...").

Regarding claim 18, Wang describes decomposing the map using a singular value decomposition algorithm on page 337 section 3.3 left column fifth paragraph lines 1-3 ("Applying SVD to $A$ gives $A = U\lambda E^T = WE^T$, where $E = [E_{VDM}, E_{MVM}]$ contains the eigen functions of $A$...From this, the two maps can be expressed as...$\theta_{MVM}(x, y, \varphi, c) = \Sigma\ Wi(x, y, \varphi)Ei_{MVM}(c)$...") and in the sixth paragraph lines 4-5 ("...the eigenvalues decrease rapidly in magnitude...By this decomposition and compression, the original 68 MB of VDM is reduced to 4 MB."),where it is described that the map, MVM, is decomposed using the singular value decomposition, or SVD.

Regarding claim 19, Wang describes a computer implemented method, as described on page 337 section 4 first paragraph lines 1-4 ("Our system is implemented on a 1.4 GHz 768MB

Pentium IV PC with an ATI Radeon 9700 Pro 128MB graphics card. The hardware-accelerated VDM rendering is implemented as a single rendering pass using Pixel Shader 2.0 with OpenGL."), for rendering a synthesized image, which is an image that renders several characteristics, as described on page 334 in the abstract lines 5-8 ("Unlike traditional displacement mapping, VDM allows for efficient rendering of self-shadows, occlusions and silhouettes without increasing the complexity of the underlying surface mesh."). Wang also describes establishing a surface geometry of a structure to be synthesized in the abstract lines 5-8 ("Unlike traditional displacement mapping, VDM allows for efficient rendering of self-shadows, occlusions and silhouettes without increasing the complexity of the underlying surface mesh."); identifying a plurality of points on the surface geometry on page 335 section 3.1 first paragraph lines 3-6 ("For a given viewing direction **V** $=(\theta, \varphi)$ expressed in spherical coordinates, each reference surface point $P$ with texture coordinate $(x, y)$ projects to a mesostructure surface point $P'$...."), as illustrated in Figure 3; establishing, for each point of the plurality of points, parameters related to a surface texture to be synthesized at the point, a synthesized viewing direction and a synthesized illumination direction on page 336 section 3.2 left column third paragraph lines 1-4 ("The parameters of each pixel on the rasterized surface are then computed. These parameters consist of the texture coordinate $T = (x, y)$, the illumination direction $\mathbf{L} = (\theta_L, \varphi_L)$, the viewing direction $\mathbf{V} = (\theta_V, \varphi_V)$..."), as shown in Figure 5; and using a representation of distances from a reference surface to a sample structure to modify characteristics of the point when rendered, the distances being a function of a selected viewing direction on page 336 section 3.2 right column fourth paragraph lines 1-8 ("Shadowing of the intersection point from the light source can be determined from the VDM function.") and in the sixth paragraph lines 1-2

("The distance $h \cdot sec(\theta_L)$ between $P'$ and $P''$ is compared to $d_L$ to determine the presence of shadow."), where it is described that the representations of distance is used to modify the characteristic of the point, such as to shadow the point, where the distance is a function of a selected viewing direction, as shown in Figure 5.

Regarding claim 20, Wang describes establishing a local viewing curvature along the synthesized viewing direction on page 336 section 3.2 left column third paragraph lines 1-4 ("The parameters of each pixel on the rasterized surface are then computed. These parameters consist of...the local curvatures $c_V$, $c_L$ along **V** and **L** respectively.").

Regarding claim 21, Wang describes establishing a local illumination curvature along the synthesized illumination direction on page 336 section 3.2 left column third paragraph lines 1-4 ("The parameters of each pixel on the rasterized surface are then computed. These parameters consist of the texture coordinate $T = (x, y)$, the illumination direction $\mathbf{L} = (\theta_L, \varphi_L)$...and the local curvatures $c_V$, $c_L$ along **V** and **L** respectively."), where it is described that parameters of local curvature are defined for both the illumination direction , **L**, which are parameters that are defined within a local coordinate system, as described on page 336 section 3.2 left column second paragraph lines 2-4 ("Each surface normal and the two orthogonal directions of the texture define a local coordinate system in which the viewing and lighting directions are expressed.").

Regarding claim 22, Wang describes interpolating parameters of a second plurality of points, as illustrated in Figure 3(b), based on parameters established for the first-mentioned plurality of points, as illustrated in Figure 3(a), on page 338 in the Appendix section second paragraph lines 1-5 ("Bending the zero-curvature microgeometry surface to have curvature $C =$

$C_0$ causes the zero-curvature intersection points to correspond to new viewing angles ($\theta'_0, \theta'_1, \ldots, \theta'_{n-1}$) that are no longer a uniform sampling. To obtain the VDM values, we resample these non-uniform samples by linear interpolation."), where it is described that the second group of points illustrated in Figure 3(b) are interpolated.

Regarding claim 23, Wang describes the representation, or VDM, includes finite distances from a reference surface to the, sample structure along the selected viewing direction on page 335 section 3.1 first paragraph lines 1-3 ("A view-dependent displacement map records the distance of each mesostructure point from the reference surface along the viewing direction…"), and if a finite distance from the reference surface to the sample structure does not exist for a portion of the reference surface, an indication that such a finite distance does not exist for the portion form the reference surface to the structure along the selected viewing direction on page 335 section 3.1 third paragraph lines 7-12 ("If an intersection with the mesostructure exists for $(x, y)$ in direction $(\theta, \varphi)$…then the VDM function takes the value of the view-dependent displacement. If the intersection does not exist, then $d_{VDM}$ is set to -1."), and wherein using the representation includes rendering the point if a finite distance exists and not rendering the point if a finite distance does not exist, as described on page 336 section 3.2 left column fifth paragraph lines 1-5 ("When $dVDM = -1$, then the corresponding line of sight intersects no detailed geometry. In this case, the pixel need not be processed and the rest of the algorithm is skipped.").

Regarding claim 24, Wang describes calculating an offset using the corresponding distance of each point along the viewing direction to identify an actual texture coordinate from the reference surface on page 336 section 3.2 right column first column lines 1-4 ("…the actual

texture coordinate of each mesostructure intersection point needs to be determined.") and in second paragraph lines 1-8 ("For a planar reference surface, the offset between the real texture coordinate $T'$ and original texture coordinate $T = (x, y)$ can be computed as $dT = d_{VDM}(x, y, \theta_V, \varphi_V, c_V)Vxy$, where $Vxy = (sin\theta_V cos\varphi_V, sin\theta_V sin\varphi_V)$... the texture offset can be computed in the same way from the extended VDM displacement...").

Regarding claim 25, Wang describes determining if a point is occluded by another portion of the synthesized structure for the synthesized illumination direction on page 336 section 3.2 right column fourth paragraph lines 1-8 ("Shadowing of the intersection point from the light source can be determined from the VDM function...The point $P''$ represents the reference surface intersection of **L** passing through $P'$.") and in the sixth paragraph lines 1-4 ("The distance $h \cdot sec(\theta_L)$ between $P'$ and $P''$ is compared to $d_L$ to determine the presence of shadow. When the two quantities are equal, the light source is not occluded from $P'$; otherwise, $P'$ is in shadow."), where it is described that occlusion is determined from the VDM function, or a function that provides synthesized surfaces, as described on page 334 in the abstract lines 5-8 ("Unlike traditional displacement mapping, VDM allows for efficient rendering of self-shadows, occlusions and silhouettes without increasing the complexity of the underlying surface mesh."), in which the illumination direction, **L**, is synthesized due to this computation being performed on a synthesized structure.

Regarding claim 26, Wang describes modifying characteristics of the point when rendered to include shadowing; if the point is occluded by another portion of the synthesized structure on page 336 section 3.2 right column fourth paragraph lines 1-2 ("Shadowing of the intersection point from the light source can be determined from the VDM function."), sixth

paragraph lines 1-4 ("The distance $h \cdot sec(\theta_L)$ between *P'* and *P''* is compared to $d_L$ to determine the presence of shadow. When the two quantities are equal, the light source is not occluded from *P'*; otherwise, *P'* is in shadow."), where it is described that the shadow characteristics of the point are determined, and that determination is used to render the presence of shadow for the points on that surface, as described on page 334 right column third paragraph lines 6-7 ("...VDM to interactively compute self-shadows as well as shading, occlusion and silhouettes."), and as shown in Figure 1(d) and Figure 9.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Said Broome whose telephone number is (571)272-2931. The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S. Broome SB
6/21/06

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